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NOTICE OF ALLOWANCE AND FEE(S) DUE

26304

7590

06/29/2009

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

ELPENORD, CANDAL

ART UNIT

PAPER NUMBER

2416

DATE MAILED: 06/29/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,187	12/11/2003	Satoshi Sumino	FUJM 20.762	8053

TITLE OF INVENTION: SWITCHING APPARATUS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/29/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

26304 7590 06/29/2009
KATTEN MUCHIN ROSENMAN LLP
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NEW YORK, NY 10022-2585

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/29/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
ELPENORD, CANDAL	2416	370-389000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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26304	7590	06/29/2009	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			ELPENORD, CANDAL	
			ART UNIT	PAPER NUMBER
			2416	

DATE MAILED: 06/29/2009

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 715 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 715 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/733,187

Examiner

CANDAL ELPENORD

Applicant(s)

SUMINO ET AL.

Art Unit

2416

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to March 12, 2009.
2. ☒ The allowed claim(s) is/are 1-17, renumbering as 1-17 respectively.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

Reasons For Allowance

1. The following is an examiner's statement of reasons for allowance:
2. Claims 1-17 are allowed (renumbering as 1-17 respectively).

The present invention is directed to a switching apparatus for learning a source address set in a packet in an address learning table and delivering the packet on the basis of an address learned in the address learning table along with an address learning unit for limiting the a number of learned addresses for each user group in the address learning table such that the number of learned addresses is less than the address learning upper limit for the user group. Each independent claim uniquely identifies the distinct claimed features.

Regarding independent claim 1, an address learning unit for limiting a number of learned addresses such that a number of learned addresses in said address learning table for each of user groups which are classified into a plurality of groups based on header information set in said packet is equal to or less than an address learning upper limit value for said user group and a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning upper limit value is set for each user group, and said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned

addresses of the user group in the learning number counter when the number of learned addresses for the user group does not exceed the address upper limit.

Regarding independent claim 7, a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the learning number counter when the number of learned addresses for the user group does not exceed the address upper limit, and said address learning unit assigns a fixed said address learning upper limit value to each user group and assigns a fixed said address learning upper limit value to each user group, said address learning unit sets said address learning upper limit value for each user group on the basis of subscription managing information for each user group, said subscription managing information is a subscription band of each user group, and said address learning upper limit value is weighted according to the subscription band of each user group.

Regarding independent claim 8, a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the learning number counter when

the number of learned addresses for the user group does not exceed the address upper limit, said address learning unit assigns a fixed said address learning upper limit value to each user group, said address learning unit sets said address learning upper limit value for each user group on the basis of subscription managing information for each user group, and said subscription managing information is a number of subscribing locations of each user group, and said address learning upper limit value is weighted according to the number of subscribing locations of each user group.

Regarding independent claim 12, an address learning unit for limiting a number of learned addresses on the basis of a total number threshold value which is based on a number of learnable addresses by using memory of said address learning table shared with all of said user groups and an individual guaranteed value set for each of user groups which are classified into a plurality of groups based on header information set in said packet by using memory of said address learning table for guaranteeing an individual guaranteed value of each user group, so as not to allow increase in a number of learned addresses for a user group which number in said address learning table exceeds said individual guaranteed value when a total number of learned addresses learned in said address learning table reaches said total number threshold value; and a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the

learning; number counter when the number of learned addresses for the user group does not exceed the address upper limit.

Regarding independent claim 14, an address learning unit for, on the basis of a total number threshold value which is based on a number of learnable addresses by using memory of said address learning table shared with all of said user groups and an individual guaranteed value set for each of user groups which are classified into a plurality of groups based on header information set in said packet by using memory of said address learning table for guaranteeing an individual guaranteed value of each user group, marking an address learned in said address learning table for a user group whose number of learned addresses exceeds said individual guaranteed value at a time of learning the new address, and overwriting the marked address with a new address of a user group whose number of learned addresses is less than said individual guaranteed value when a total number of currently learned addresses reaches a maximum number of addresses learnable in said address learning table, and a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the learning number counter when the number of learned addresses for the user group does not exceed the address upper limit.

Regarding independent claim 15, an address learning unit for limiting a number of learned addresses such that a number of learned addresses for each of user groups which are classified into a plurality of groups based on header information set in said packet in said address learning table is equal to or less than an address learning upper limit value for said user group; and a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the learning number counter when the number of learned addresses of the user group does not exceed the address upper limit, and when a packet with a new address arrives, said address learning unit records occurrence of an event in which a number of learned addresses for a user group of the source address of said packet reaches said address learning upper limit value for said user group.

The closest prior arts, Wu '629 discloses a conventional method for controlling the number of addresses in an address table of switch including detecting if the number of learned addresses has exceeded a predetermined maximum number of learnable addresses from the address learning table, col. 2, lines 32-64. Wu '629 further discloses setting the number of learnable addresses for each respective port in the switch (col. 4, line 10-17) and recording the associated source when it is determined the

number of learned addresses has exceeded the predetermined maximum number of learnable addresses (col. 3, line 63 to col. 4, line 7).

Similarly, Vasa '218 discloses a conventional address look-up mechanism in a multi-port bridge form the controlling use of memory as look-up table (fig. 6, see learned look-up tables 204A, Permanent look-up table 204B) for filtering and directing incoming packets (col. 2, lines 18-35). Vas '218 further discloses a controller for performing a look-up cycle on the packet (col. 3, line 1-15, line 26-49).

The closest prior arts are silent to the uniquely distinct claimed features such as "a learning number counter for storing a number of learned addresses for each user group of said plurality of said user groups in said address learning table, wherein said address learning unit limits the number of learned addresses of a user group judged based on a header information of a received packet in said plurality of user groups in said address learning table and updates the number of learned addresses of the user group in the learning number counter when the number of learned addresses of the user group does not exceed the address upper limit, and when a packet with a new address arrives, said address learning unit records occurrence of an event in which a number of learned addresses for a user group of the source address of said packet reaches said address learning upper limit value for said user group".

The closest prior arts either singularly or in combination fail to anticipate or render the uniquely distinct claimed features obvious.

Dependent claims 2-6, 9-11, 13, 16-17 are allowed by virtue of their dependency on claims 1, 12 respectively.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kadambi et al (US 7,415,022 B2), Tamura et al (US 2003/0081606 A1), Wadekar et al (US 2004/0122929 A1), Kanurl et al (US 6,934,260 B1), Crittenion et al (US 6,779,043 B1), Ohnishi et al (US 2003/0031190 A1), Rodrig et al (US 6,256,314 B1), Brown et al (US 6,633,567 B1) and Kusayanagi et al (US 2003/0123462 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571) 270-3123. The examiner can normally be reached on Monday through Friday 8:00AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/

Examiner, Art Unit 2416

/KWANG B. YAO/

Supervisory Patent Examiner, Art Unit 2416